



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,364	04/16/2002	Robert F. Karlicek JR.	GLO 2 0077	4571

27885 7590 11/12/2003

FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP  
1100 SUPERIOR AVENUE, SEVENTH FLOOR  
CLEVELAND, OH 44114

EXAMINER

TSIDULKO, MARK

ART UNIT PAPER NUMBER

2875

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/063,364

Applicant(s)

KARLICEK, ROBERT F.

Examiner

Mark Tsiduiko

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dair et al. (US 2002/0033979) in view of Natori (US 6,443,597).

Referring to Claims 1, 2 Dair et al. disclose (Fig 1) an apparatus including a first substrate [106] having a light transmitter, which may be LED (page 1, [0004], a second substrate [108] having LED and edge connectors for coupling the first and second substrates (page 16, [0192]).

Dair et al. discloses the instant claimed invention except for rhombic shape.

Natori discloses (col.2, lines 39-50) a display unit having a substrate being in a rhombic shape.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the substrate of Dair et al. having rhombic shape, as taught by Natori, in order to obtain a small ratio of the areas among the light emitting surfaces to the areas of the light emitting surfaces.

Referring to Claim 3 Dair et al. disclose (Fig.24B) interconnector [2412] used for electrical connection between the edge connectors [2414] of the substrates (page 16, [0196]).

Referring to Claim 4 Dair et al. disclose (Fig.3A) that the LED [110] is electrically connected to the substrate [106], which is connected to the edge connector [2414] (Fig. 24B), and the edge connector of the first substrate connects the edge connector of the second substrate by interconnector [2412] (page 16, [0196]).

Referring to Claim 9 Dair et al. discloses the instant claimed invention except for third substrate.

It has been held, that mere duplication of the essential parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dair et al. (US 2002/0033979) in view of Roberts et al (US 2002/0149312).

Referring to Claim 5 Dair et al. discloses the instant claimed invention except for a thermally conductive layer.

Roberts et al. disclose a heat dissipating package having a thermally conductive layer (page4, [0057]). It is well known in the art, that the PCB has an electrical path used for electrical connection between LED and power supply, otherwise the light source mounted on PCB cannot work. Since in this case the PCB is an intermediate electrical connector between LED and the edge connector, it is understood, that the LED (optoelectronic component) is electrically connected to the edge connector.

Referring to Claim 6 Dair et al. discloses the instant claimed invention except for substrate having a lens.

Roberts et al. disclose an emitter device wherein the substrate has a lens (page 7, [0076]).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the substrate of Dair et al. made of thermally conductive material, as taught by

Roberts et al. in order to remove the heat, and having the lens, as taught by Roberts et al. in order to increase diffusion and reflection of the light.

Referring to Claim 7 it has been held, that mere duplication of the essential parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claims 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dair et al. (US 2002/0033979) in view of Adachi et al. (US 4,369,435).

Dair et al. discloses the instant claimed invention except for terminating element.

Adachi et al. disclose a converter housing having a terminating element for supplying the power to the structure (col. 1, lines 39, 40).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the terminal element, as taught by Adachi et al. for the device of Dair et al. in order to supply the power to the structure.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dair et al. and Roberts et al. as applied to claim 7 above, and further in view of Nakanishi et al. (US 5,539,767).

Roberts et al. disclose (Fig. 8) a substrate [2601] having a depressions [2602] in which LEDs are arranged (page 8, [0084]), but Dair et al. and Roberts et al. do not disclose a circuit board having the holes for passing the light.

Nakanishi et al. disclose a circuit board having the holes for passing the light (Abstract).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the circuit board having the holes, as taught by Nakanishi et al. for the device of Dair et al. in order to pass the light generated from the light source.

Claims **12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Dair et al. (US 2002/0033979).

Dair et al. disclose (Fig. 1) an apparatus including a first substrate [106] having a light transmitter, which may be LED (page 1, [0004], a second substrate [108] having LED and edge connectors for coupling the first and second substrates (page 16, [0192]). While Dair et al. does not disclose shape of the substrates, it will of course be understood, that the substrate may have any desired shape, including rhombus, in order to obtain optimal form and size of the device.

Referring to Claim **13** Dair et al. disclose (Fig.24B) interconnector [2412] used for electrical connection between the edge connectors [2414] of the substrates (page 16, [0196]).

Referring to Claim **14** it will be readily understood by those skilled in the art that any type of electrical connection, including series or parallel, which are well known in the art, may be used for the electrical connection.

Claim **15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Dair et al. (US 2002/0033979) in view of Natori (US 6,443,597).

Dair et al. discloses the instant claimed invention except for rhombic shape of the substrate.

Natori discloses (col.2, lines 39-50) a display unit having a substrate being in a rhombic shape.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the substrate of Dair et al. having rhombic shape, as taught by Natori, in order to obtain a small ratio of the areas among the light emitting surfaces to the areas of the light emitting surfaces.

Claims **16, 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Stekelenburg (US 2003/0185020) in view of Stillwell et al. (US 6,361,357).

Referring to Claim 16 Stekelenburg discloses (Fig.2) LED supported by a substrate (circuit board) and an electrical socket [20] disposed on the substrate, but does not disclose that the socket is shaped to receive an electrical plug.

Stillwell et al. disclose a socket that is shaped to receive an electrical plug (col.6, lines54-59).

Referring to Claim 19 it is well known in the art, that any plug has an electrical path, otherwise the electrical communication between the power source and light source is impossible.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the socket of Stekelenburg shaped to receive an electrical plug, as taught by Stillwell et al. in order to obtain electrical communication to the LED.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stekelenburg and Stillwell et al. as applied to claim 16 above, and further in view of Frank et al. (US 6,411,522).

Stekelenburg and Stillwell et al. disclose the instant claimed invention except for a discrete plug.

Frank et al. disclose (claim 13) a discrete plug connected to the socket.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the discrete plug connected to the electrical socket, as taught by Frank et al. for the device of Stekelenburg and Stillwell et al. in order to provide electrical communication.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stekelenburg and Stillwell et al. as applied to claim 16 above, and further in view of Tamura et al. (US 4,393,677).

Stekelenburg and Stillwell et al. disclose the instant claimed invention except for a plug integral with a substrate.

Tamura et al. disclose (claim 11) a plug integral with a substrate.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the plug of Stillwell et al. integral with the substrate, as taught by Tamura et al. in order to provide an electrical communication to an electrical socket.

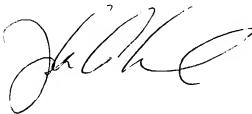
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Tsidulko whose telephone number is (703)308-1326. The examiner can normally be reached on 8 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703)872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

M.T.  
October 23, 2003

A handwritten signature in black ink, appearing to read 'Mark Tsidulko', is written over a light gray grid background.